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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,299	11/10/2003	Joshua C. Liu	370041-00006	5219
8840	7590	05/02/2005	EXAMINER	
ECKERT SEAMANS CHERIN & MELLOTT, LLC			KENNY, STEPHEN	
ALCOA TECHNICAL CENTER			ART UNIT	
100 TECHNICAL DRIVE			PAPER NUMBER	
ALCOA CENTER, PA 15069-0001			3726	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/705,299		LIU ET AL.	
	Examiner		Art Unit	
	Stephen J Kenny		3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) 46-61 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-45 is/are allowed.
- 6) ☒ Claim(s) 46-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 8, 10-12, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener (US Patent No 4944342) in view of Hawes et al. (US Patent No 5279535).

Regarding claim 1, Lauener discloses providing a cylindrical roll core (8) having a central longitudinal axis; forming a plurality of longitudinally extending cooling passages (26) in the roll core proximate to the surface of the roll core for conducting a cooling medium through the roll core to cool the roll during use; and forming a metal overlay (or "shell") (7) on the roll core (8) (see Figure 2, & column 3, lines 48-51).

Regarding claims 3-6, 10-11, & 14-15, Lauener discloses forming cooling passages (26) spaced regularly & parallel about the central longitudinal axis of the roll core (8); perpendicular cooling passages (22, 25); and acute angle passages (23, 24); although Lauener does not explicitly disclose forming the holes by drilling, it is inherent that such holes/passages be formed in this manner since drilling is the only viable machining operation for producing holes/passages in dense roller cores. (Further support of this inherency can be found in Hawes et al. US Patent No 5279535 column 1, line 52).

Regarding claims 8, 12, Lauener discloses the roll core (8) defining a centrally located longitudinally extending inlet & outlet passages (15, 16), and forming a plurality of radially

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extending passages (22-25) in the roll core to connect the cooling passages to the inlet & outlet passages (Figure 2).

Lauener does not explicitly disclose that the cooling passages are formed within the interior of the roll core.

Hawes discloses forming cooling passages within the interior of the roll core, proximate to the surface (item 2 in Figure 1). The use of cooling channels within the interior of the core is advantageous in that it provides adequate cooling without adversely affecting the geometric stability or resistance to bending of the roller when operating at high speeds. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a roller with cooling channels as disclosed by Lauener, wherein said channels are formed in the interior of the roll as taught by Hawes in order to realize the advantages above.

Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener/Hawes as modified above, and further in view of Schroder et al. (US Patent No 5902685).

Lauener/Hawes disclose the claimed invention except for forming the overlay/shell (7) by any of the specific methods claimed.

Schroder discloses applying material to a roll core via arc melding (column 6, lines 46-50) which is known to provide advantageous thermal welding characteristics; therefore it would

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have been obvious to one of ordinary skill in the art at the time the invention was made to form a metal overlay as disclosed by Lauener/Hawes, by arc welding as taught by Schroder in order to realize these advantages. Furthermore, it would have been an obvious matter of design choice to form the overlay/shell by any of the claimed methods since applicant has not disclosed that such methods solve any stated problem or is for any particular purpose. As applicant states on page 12 paragraph 0058 that the claimed methods are merely the "preferred" methods, thereby indicating that other methods are acceptable to perform the invention.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener/Hawes, as modified above, and further in view of Jachowski et al (US Patent No 4844747).

Lauener/Hawes discloses the claimed invention except for heat-treating the roll.

Jachowski discloses heat treating (i.e. annealing) the roll (column 2, lines 60-64).

Annealing a roller is advantageous in that it relieves any residual stresses caused during formation of the roller. This helps reduce any eccentricity in the roller. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a roller as disclosed by Lauener/Hawes, and heat treating the roller as disclosed by Jachowski, in order to realize the advantages discussed above.

Claims 9, & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener/Hawes, as modified above, and further in view of Hartz (US Patent No 5598633).

Lauener /Hawes, disclose the claimed invention except for explicitly stating that the channels are plugged prior to forming the overlay/shell.

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Hartz discloses plugging the channels prior of a roll core prior to forming the overlay (column 3, lines 2-5). The plugging of the channels is advantageous in that it prevents any clogging of the channels during fabrication of the overlay, thus ensuring an unimpeded flow of coolant during operation. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a roll core as disclosed by Lauener/Hawes while plugging the channels prior to forming the overlay/shell as taught by Hartz in order to afford the advantages discussed above.

Allowable Subject Matter

Claims 16-45 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J Kenny whose telephone number is 571-272-4531. The examiner can normally be reached on mon - fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sk

S. Kenny



DAVID P. BRYANT
PRIMARY EXAMINER